

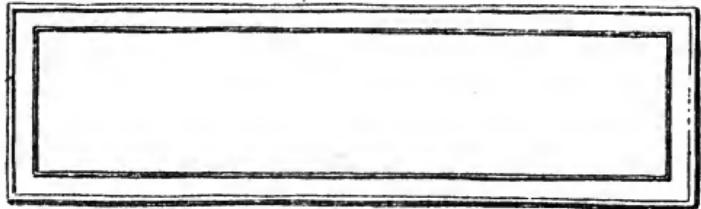
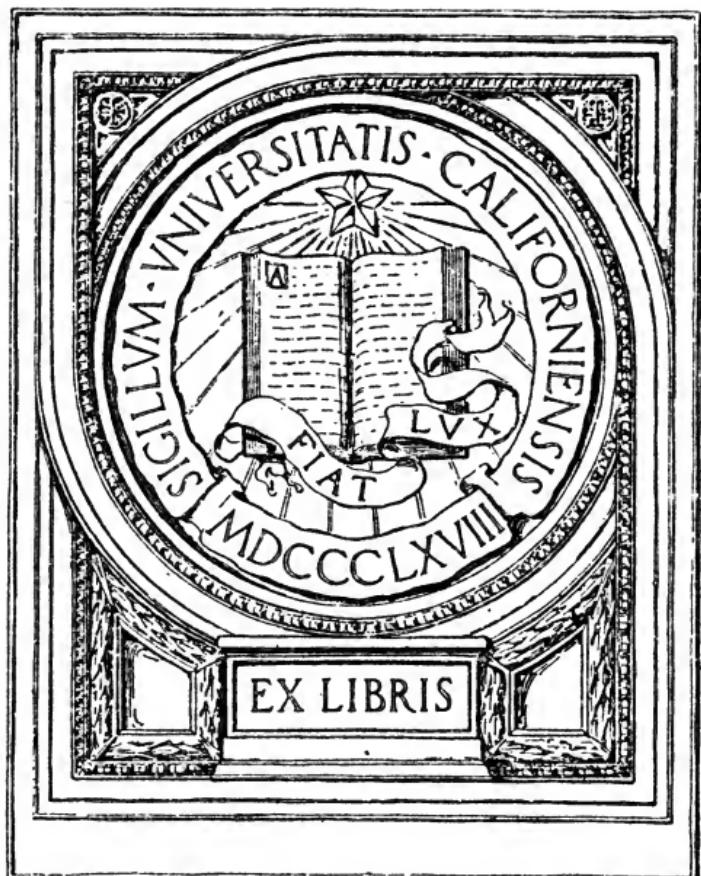
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SONGS
IN WAR

SPENCER WILKINSON







FIRST LESSONS IN WAR

"I have read Professor Spenser Wilkinson's little book, it is quite the best thing of its kind I have ever seen, and I should be glad to see it in the hands of every Territorial soldier; I shall do my best to get it there."—*Lord Esher*.

"'First Lessons in War' I have read with interest and pleasure. In my opinion, it describes the soldier's business, his weapons, and his marching and fighting formations in singularly terse, lucid, and appropriate language, and the book should be of much value to the officers and men who have come forward, and who are coming forward, for service during the present war."—*Field Marshal Lord Nicholson, late Chief of the Imperial General Staff.*

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FIRST LESSONS IN WAR

BY

SPENSER WILKINSON

CHICHELE PROFESSOR OF MILITARY HISTORY
FELLOW OF ALL SOULS' COLLEGE, OXFORD
PRESIDENT OF THE MANCHESTER TACTICAL SOCIETY

THE THIRD EDITION

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**TO
THOSE OF MY COUNTRYMEN
WHO HAVE
VOLUNTEERED FOR THE WAR**

297708

PREFACE TO THE SECOND EDITION

EVERY war brings in its course changes in tactics, of which the precise nature cannot be foreseen. This book was written in October 1914, before the accounts from the theatre of war had thrown much light on those changes of method of which we are now beginning to hear in some detail. The most important of them is the influence of artillery in compelling the infantry to be content with a much shorter field of fire in front of its trenches than is desirable for obtaining the full effect of the modern bullet. I think however that it is premature at present to modify the statements in my text as to the value of a clear field of fire, of which I suspect that the importance will reassert itself in the later stages of the war.

S. W.

December 8th, 1914

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CHAPTER I

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IF you ask any old soldier or officer who has seen service what is the mark of a good army he will answer you

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without a moment's hesitation with a single word, "discipline." Discipline is the Latin name for the process of learning, and when we say that an army is disciplined, we simply mean that the officers and men have learned their business. War is the hardest business known. A soldier spends most of his time tramping along the road carrying a rifle, 120 cartridges, a bayonet, a knapsack, a haversack, a water-bottle, and a great-coat. He must march, whether it is wet or fine, whether he is fresh or tired, hungry or not. When he comes to the battlefield, which may be after he has already marched 20 miles on the same day, he will probably have to lie down and shoot. The enemy's bullets will be singing about his ears and comrades struck dead or maimed in his sight, yet he must go on shooting and shoot straight. These things he will not be able to do without an apprenticeship. A hard training is needed to get him into

condition to march all day with his load, and to learn to bear hunger and thirst. Practice is needed to make him alert to comprehend orders and quick to execute them. Assiduous practice is needed to enable him to shoot coolly and well amid a hail-storm of bullets. Discipline is the process of learning these things until they become habits, a second nature.

The most important thing the soldier has to learn is to use his weapons, of which by far the most deadly is the bullet. The rifle is a machine for propelling bullets, just as the gun is a machine for propelling shells. The rifle itself becomes a weapon only when the bayonet is fixed on it so that it makes a pike. Probably 95 per cent. of the men killed and wounded in all the wars of the last hundred and fifty years have been struck by bullets, about 4 per cent. by shells, and the remaining 1 per cent. by the bayonet, the sword or the lance.

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In the present war, the shell appears to be increasing its share.

By far the most of you have joined the infantry, and your wish is to emulate the good shooting of the British regular troops of which you have read at the battles of Mons, of the Marne, and of the Aisne. That will be a matter of careful instruction and of practice. But no man can learn to shoot or can begin the practice with benefit unless he understands both the rifle and the bullet. The rifle will be explained to you by your instructors, and you cannot get to know much about it from a book.

A bullet is a little lead dart an inch and a quarter long and three-tenths of an inch thick, rounded off to a point at the front and weighing rather less than half an ounce. It has a hard skin made of an alloy of copper and nickel and the pointed front is hardened with aluminium.

This is quite a different thing from

the old-fashioned bullet of Wellington's time. That was a round ball of lead weighing an ounce or more. It was shot out from a smooth barrel by a charge of black powder which made a great smoke. It could do very little harm beyond 300 yards, and the musket was so inaccurate that no man could be sure of hitting a small haystack 200 yards away from him. Shooting in those days was only an improved form of stone throwing. The musketeer was not as good a shot as David with his sling or as the Roman slingers with their lead bullets. The bullet of to-day is more like the arrow of the old English long bowmen. In skilful hands it will do terrible execution, but an untrained man will not hit the mark except by accident.

The back end of the bullet is fixed into the front end of the cartridge, a brass case, which, behind the bullet, becomes much wider than the bullet

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itself and contains about the twelfth of an ounce of cordite, a strong explosive made up into small cords or tubes. At the back of the cartridge-case is a cap containing an explosive mixture, which takes fire when struck. When the rifle is loaded the bullet lies in the back or breach end of the barrel, and the wide part of the cartridge-case in an enlargement of the barrel called the powder chamber. When you pull the trigger a needle strikes the cap at the back of the cartridge-case, pierces it, and so lights the explosive which fires the cordite. The explosion of the cordite drives the bullet along the barrel with tremendous force, so that the bullet leaves the barrel with a pace of over 2,400 feet a second.

When a stone is thrown, an arrow shot, or a bullet fired, three forces act upon it.

The impetus it has received from the hand, the bow, or the powder, sends it

forward in a straight line in the direction in which it started. If there were no other force it would go on in that straight line, at the same rate, for ever. But it is pulled towards the centre of the earth by the earth's mass, which would make it fall 16 feet in the first second, 64 by the end of the second, 144 by the end of the third, and so on.

If there were no other forces but these two we could easily draw the path of the bullet. Suppose it to start at the rate of 2,400 feet a second. We should rule a straight line representing the prolongation of the barrel of the rifle, and on that straight line should make a mark at the end of each 2,400 feet. Then from each of these marks we should drop a perpendicular, which would be at the first mark 16 feet long, at the second 64 feet long, and at the third 144 feet long. The curve starting from the muzzle of the barrel and passing through the lower ends of these

perpendicular lines would represent the path of the bullet.

But there is a third force which upsets this simple calculation. It is the resistance of the air, which acts as a constant brake, stopping the bullet. You know by experience something about the resistance of the air, because you know what a wind there is if you put your head or your hand out of the window of an express train. If the train is going 60 miles an hour the wind is pretty strong, but 60 miles an hour is only 88 feet a second. A modern bullet when it leaves the rifle is going 2,400 feet a second. You can imagine what a terrific wind it meets—a wind of 1,600 miles an hour. As long as the bullet moves forward it meets a wind of its own pace. This wind makes it go slower every instant, and in a few seconds tires it out and stops it altogether. For a bullet once fired can receive no new impulse. It is not like

the torpedo, which has its own engines and a screw, and can, therefore, keep up a constant rate of movement through the water.

To evade the resistance of the air the diameter of the bullet is made very small, only three-tenths of an inch. The wind can only act on the amount of surface exposed to it. It will drive a big sail faster than a small one, and it can resist the forward motion of the bullet only by the strength with which it can blow on an area equal to the bullet's section, which is a circle three-tenths of an inch across. The driving power of the bullet depends upon the weight behind that area. The front of our bullet has behind it the weight of more than four spherical bullets of its own diameter. But it must be kept point foremost, and it has been found that the only way to insure that, is to make it spin like a top. That is the purpose of the rifling.

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The rifle maker cuts five parallel grooves in the inside of the barrel. He has a cutting tool which will cut a groove in a steel surface and is held firm at the end of a rod. He passes the barrel along this rod which is kept in a fixed position inside it so that the tool cuts its groove as the barrel moves along. As the barrel moves forwards it is turned round at exactly the rate at which the bullet is to spin. Thus the groove cut, instead of being a straight line inside the barrel, will be a spiral gradually going round it on the inside. By repeating the process five parallel grooves are made to wind round the inside of the barrel. If, then, you take a bullet of soft lead which fits the barrel tightly so that it will not quite go in, and if you strike it with a hammer you will drive it into the barrel and some of the lead will be squeezed into the grooves, making five tiny little wings fitting into them. If you then push the bullet with a stick through the barrel

these little wings will follow the grooves and the bullet will turn round as it goes along the barrel. This is exactly what happens when the rifle is fired. The bullet is put in at the breech, into a chamber just a trifle wider than the barrel. The explosion of the powder behind it does the work of the hammer ; it forces the bullet into the barrel so that some of the lead fits into the grooves. It also does the work of the stick and drives the bullet through the barrel. When the bullet leaves the muzzle it is spinning at precisely the rate at which it turned while it was going through the barrel.

As soon as the bullet leaves the rifle the earth begins to pull it towards the ground, and it falls, at first slowly, but faster and faster as it goes along. The air gives the bullet some support against its fall, which is slower than it would be if there were no air, but becomes quicker every second. If,

therefore, you want the bullet to strike an object level with your eye you must point the rifle a little upwards according to the distance of the object. A very slight tilt will send the bullet up so that it will drop to its original level at 600 yards; a little greater tilt will drop it a mile away.

The bullet will always follow with amazing accuracy a course determined by the direction in which the rifle is pointed, and will strike the ground at a distance from the rifle precisely corresponding to the tilt or elevation given to the barrel. Suppose you fixed the rifle on a table with an elevation of ten degrees and with a level plain in front of you. If you then looked through the barrel you would be looking up into the air. The straight line of the barrel would be pointing to a spot in the air which at a distance of a mile and a half would be 2,000 feet high. If a balloon were at that spot at the moment

you would see it through the barrel. But if without altering the position of the rifle you were to load it and pull the trigger the bullet would not reach the balloon. As soon as it had started the pull of the earth would begin to drag it down from the straight line along which you looked. After going a mile it would be nearly 600 feet below that straight line though it would be 700 feet above the ground. That would be the highest point which it would reach. At a mile and a half, when passing under the balloon, it would be about 270 feet high, and would drop to the ground in another 160 yards, just 2,800 yards from the muzzle of the rifle. With five degrees of elevation to the rifle the bullet will drop just over 2,000 yards away, with two degrees about 1,450, with one degree 1,000 yards. The elevation for 600 yards is very small indeed, less than half a degree, and if the rifle is fired with that elevation by a

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man lying down the bullet will never rise more than 5 feet from the ground.

In order to enable the soldier to fire his rifle in the right direction and with the elevation corresponding to the distance of the target the rifle is provided with sights. About an inch from the muzzle of the rifle there is fixed outside the barrel a small piece of steel which stands up exactly over the centre of its circumference. If you look along the barrel, from behind, this projection looks like a sharp pyramid the shape of the letter A. Farther back along the barrel near the breech is the back sight, a kind of tiny ladder which stands upright on the barrel with one rung which moves up and down the ladder and can be fixed at any height. In the middle of the top edge of this rung there is a notch like the letter V.

Suppose the rung to be at the bottom of the ladder and its top edge then to be exactly the same height above the

centre of the barrel as the point of the A of the foresight. If you then hold the rifle in the position for firing and look along it towards the target so that you see the point of the A in the middle of the V and just level with the top of the rung you will be looking along a straight line exactly parallel to the axis of the barrel, and if behind the point of the A you see the centre of the bull's-eye on the target, you may be sure that the barrel is pointed straight at that centre. If you fired with the rifle in that position, the bullet would start in a straight line towards the target. But it would not hit the bull's-eye, because on its way it would have begun to fall, and the farther the target was away the farther it would have fallen below the straight line from your eye to the centre of the target. You would be firing the rifle with the barrel horizontal, without tilt or elevation. Accordingly before you fire you must lift the

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rung a little way up the ladder. When you then take aim, so as to see the two sights and the centre of the target all in a straight line, the barrel will not be in that straight line but will be pointing above it. The two lines will be like a bow and its string. The string is the straight line from your eye to the target, and the barrel is one end of the bow. When you press the trigger the bullet will follow the curve of the bow. Accordingly to the height of the back sight above the barrel will be the length and height of the bow.

The bullet always takes a course represented by a bow, and will hit the target only if the length of the bow-string is the same as the distance of the target. There are as many bows as there are distances, and each line on the back sight has marked upon it the length of bow-string corresponding to the length of the bow when the back sight stands in that line. If

you make your bullet describe a bow of which the string is 1,500 yards long, and if the enemy you are aiming at is only a thousand yards from you, your bullet will pass 70 feet over his head and 500 yards behind him. If you assume him to be 1,000 yards away when his real distance is 1,500 your bullet will fall 500 yards short.

If I have made myself clear you will now understand the tremendous power of the modern bullet, provided it is fired by skilful hands. Once you have thoroughly learned how to take aim and how to pull the trigger the bullet will infallibly go to the point at which you have directed it. If you have directed it right it will hit the mark, if not, it will miss. The old-fashioned bullet of 100 years ago could not be trusted in this way, and there was therefore no use in training soldiers to shoot carefully. Most of the hits were flukes. The modern bullet makes no flukes, and therefore

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requires to be handled by a master hand. There are two elements in this mastery. The first is the power of handling the rifle properly, that is of taking aim accurately and pulling the trigger rightly. The second is the power of judging the distance correctly, which is acquired only by practice.

Accordingly, before you can be a good shot for purposes of war you have to learn how to hold the rifle, how to take aim, how to fix the sights and how to pull the trigger. You cannot be too attentive to the lessons given you in these matters. But however well you learn these lessons and however diligently you practice them they will be of little avail unless you have the distance right, so that the most useful thing you can do during all the period of your training is to practice judging distances. Whenever you go a walk give some of your time and attention to finding the distance of the objects within your range of

vision, and make it your business to be able to estimate correctly in yards the distance of anything you see. Your instructors will give you lessons in judging distances, but only your own constant effort will make you proficient in this difficult art.

When you go to the range notice carefully every shot that you fire so as to be able to correct your mistakes. Bear in mind that your value as a soldier to your country depends very largely upon the degree of thoroughness with which you learn to shoot.

After you have acquired the power of hitting the target with deliberate aim, taking your time, you must practise taking aim quickly so as to be able to shoot with some effect against objects which appear and disappear. You will have to learn also to shoot at objects moving towards you or away from you or moving from right to left or from left to right at some distance away.

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You will perhaps at first find shooting harder than you expected, but you must persevere and then in time you will have your reward. When you can hit the targets at which you practise, targets representing a man lying down or imitating other objects at which you will have to fire in battle, you will begin to have a new confidence ; you will feel that you can use your weapon with effect and you will know that you are a better man than you were. You will have acquired a power the possession of which will give you coolness and courage in presence of the enemy.

Your control of your bullets is only the first half of what you have to learn. When you get to the front you will be one of a section, ten or twelve men whose fire is directed by a section leader, usually a sergeant.

The next stage of your military education, therefore, consists in field firing. Your section will be taken to the range

by its sergeant, and there you will be given ten rounds apiece for the attack upon an enemy represented by targets so arranged that each of them, when hit, will fall down and disappear. The object of the field firing practices is to enable the section leader to plant the bullets of the section upon the targets in such a way as would do the enemy most harm, if the targets were the enemy.

When you are in battle, groups of the enemy will appear at various points in the landscape before you. If each man of your section shoots at the group which first happens to catch his eye the section's bullets might soon be squandered to very little purpose, and many of them would be thrown away, because many of you will be mistaken about the distance of the enemy. The section leader's business is to choose that group of the enemy which is most dangerous or which you are most likely to be able to hit, to judge its distance properly and thus to do what a

leader can do to direct all your bullets to the place where they will be most useful.

No doubt, there will be times when if you are a good shot and are a good judge of distance you may think that you could have chosen the targets better and estimated the range more accurately than your sergeant. But a very little experience will convince you that it is a good thing for the men of the section to work together ; that for that purpose they must have a leader and that, in the long run, to obey and back up even an imperfect leader is very much better than to be unled. The quicker you grasp this, the sooner you will be qualified to become a leader yourself.

Four sections make a platoon which is commanded by a lieutenant, who handles his four sections by giving direction to the four section leaders, very much as though the sections were the guns of a battery.

Four platoons make a company, commanded by a major or a captain. A company at full strength has about two hundred men, in which case a platoon would have fifty and a section about a dozen. But in the field the numbers are quickly thinned by wounds, fatigue and sickness, so that a section of a dozen may be regarded as a maximum.

Four companies make up a battalion which is the household or family to which an infantry soldier belongs. It has its commanding officer, a lieutenant-colonel, who is assisted by a major, an adjutant and a quartermaster, together with a number of sergeants, orderlies and clerks, and an office or orderly room. The commanding officer is the head of the household. Under his authority the whole battalion is managed. He is responsible for everything, for the care of the arms and ammunition and of the battalion's money, and for the men being properly clothed and equipped,

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properly housed and fed. He must see that the battalion is at the right place at the right time. All orders sent to the battalion by higher authorities are addressed to the commanding officer, and all orders given to the battalion are given by him. To him the four captains are responsible for their companies. He directs the battalion at all times and he is its leader on the march and in battle.

Every infantry soldier carries 120 cartridges, and there is a regimental reserve of cartridges of another hundred rounds per man carried in small-arm ammunition carts. In other words the battalion is entrusted by the nation with 176,000 bullets, with which it is the colonel's duty to do as much harm to the enemy as possible. A bullet that does not hit an enemy is usually, though not always, a bullet gone wrong. If it had no chance of hitting an enemy it has been simply wasted.

With the magazine rifle a man can easily

fire 12 shots in a minute, 720 shots an hour, so that if the battalion did not keep cool it could very easily in an hour fire away all the bullets carried by the men, and all those carried in the ammunition carts. If every bullet hit its man your battalion would put out of action 176,000 enemies. If one bullet in ten were to hit, the battalion would still account for 17,600 of the enemy. If in a battle the battalion wounded 1,760 enemies, about double its own number, that would account for only one bullet in every hundred which the commanding officer has at his disposal, and if every man of the 800 were to hit one enemy once, that would only mean that one of the 120 bullets which he carries had gone home.

To hit an enemy in battle is not so easy as it might seem, and when men are themselves being fired at it is found in practice difficult to wait before shooting until you see an enemy to aim at, to judge his distance correctly, to adjust

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the sight properly to that distance and then to take a careful aim and not to pull the trigger before the aim is true. If every man were so trained that he could do all these things quietly and coolly when under fire, your battalion would not need to be afraid of a hundred thousand Germans attacking it from the front in the daylight.

You may be quite sure that you will not shoot as well in battle as you will on the range. If you cannot hit the targets on the range, you will not be likely to hit the enemy. But if you are a dead shot on the range you will have as good a chance as possible on the battlefield.

Let me try to give you an idea of what it may be like when you go into battle. Your battalion has spent the night in billets in a little French town beside a clear stream like the Wey in which, as you crossed the bridge last night before sunset, you caught a glimpse of

a trout with its head up stream looking out for a possible fly. At six in the morning you have assembled in the main roadway and then marched on into a side valley through a village to a second village in which you halt. For the last hour you have heard the roar of firing away to the left, somewhere behind the low rolling ridge which bounds the little valley on that side. You have heard that the brigade is attacking and yours is the right battalion, of which you belong to the leading company.

At one o'clock a staff officer rides up to the colonel, who calls for the captains and explains to them the direction of the advance, pointing out a lane marked on the map. Then your company is moved off. Your platoon extends at three paces interval, its left following the lane, which is without hedges. After going forward a mile you ascend a gentle slope for another half

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mile and then pass through a belt of trees beyond which you see in front of you a mound about 150 yards long parallel to your front. A couple of men are out in front as scouts. They go up the mound and lie down. After a minute one of them holds his rifle above his head; the lieutenant joins them; the platoon is halted behind the little ridge or mound and you hear bullets whizzing through the air. What the scouts have seen is this: the little ridge on which they are lying gives them a view of a plateau extending for about a mile in every direction in front and to both sides, with here and there little patches of wood. About half a mile in their front is a little ridge parallel to their own on which they see a party of the enemy which has begun to fire at them. At one end of the enemy's ridge there is a little sand heap.

The lieutenant calls for three good shots from your section, of whom you are

one. You go up and lie down on the mound and your section commander tells you that you are to fire at the sand hill to get the range, which he thinks is 800 yards. You fire at 800 yards and see no result, the next man fires at 750, no result. The third man fires at 700 and the sergeant with a field-glass sees a splash of dust on the sand hill. That settles the range. Then the sergeant doubles up his section on to the mound and orders five rounds of independent firing at 700 yards at the enemy, whose heads can just be seen.

The enemy's bullets are whistling in the air and you hear a groan, as a man near you is hit. Then the enemy's bullets stop. A swarm of men are seen running down the face of the hillock at which your section was firing, and then for a few seconds there is nothing to be seen but the landscape, nothing to be heard except the distant

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roar of firing, which seems nearer than it did, and the voice of the lieutenant as he calls up the other sections on to the mound right and left of yours, and divides up the plain into four strips, to one of which each section leader is to attend. They are all told the range of the hillock in order that they may the better be able to judge the distances of any other points which they may pick out. Your section has ceased firing because no enemy could be seen. Then you see a thin line of men running from a point on the right of the enemy's hillock, but you see them only for fifteen seconds before they disappear.

All over the plain in your front and near to the enemy's hillock the same thing repeats itself. A line of men running, visible for a few seconds and then disappearing, and the whole time the whirl of bullets coming from invisible enemies somewhere in the plain. The enemy is advancing by rushes and taking

cover as he halts after each rush. Every time one of these groups is seen the section leader in whose strip of ground it appears calls a range and his section fires as long as the enemy remains visible. Yet the enemy keep coming on. Occasionally one of them falls, but that seems to make no difference. Your own section leader keeps you all firing at the opposite hillock because apparently the enemy has men there who know the range and who now and then hit someone in the platoon.

This is a little bit of a possible battle. The reality would be much more disagreeable, because I have left out the enemy's shells and his machine guns. The numerous enemy will not reach the ground where the platoon lies, for, as he comes nearer, the men will fire with fixed sights ; the enemy will not be able to stir without being seen and every well aimed shot will tell. Besides, there are other platoons to the right and to

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the left and other companies beyond them.

The object of the description is to show you where the platoon commander and the section leaders come in. They have to do the thinking. It was probable that the enemy on his hillock knew the exact range of your hillock. To bring up the section or the platoon before the range had been estimated would have been to expose the men at a disadvantage. So the platoon leader, noticing a sand heap on which the splash of a bullet could be seen, took a good means of finding the range before bringing up a section, and this enabled the section at once to fire at a known range. Then when the visible enemy was under fire from one section he could bring up the others without much danger, and while they were lying down they could be scanning the ground over which they would have to shoot. The fire would

be directed by the section leaders, each of whom would concentrate his attention on a special area, so that when a target cropped up he would send a dozen bullets at it. This would give the best chance that no party of the enemy would escape the attention of one of the sections.

It is evident that if in battle the bullets are to be directed with any kind of system there must be a control of the sort which I have described, and that any such control is impossible unless it has been prepared for by three kinds of training. First, that which enables each man to send his bullet in the true direction, secondly, that which accustoms him to fire at the target indicated by his section leader, and thirdly, that which qualifies the section leader to direct the firing of his dozen men and the platoon commander to distribute the work among his four section leaders. When these three kinds of training have

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been all thoroughly carried out the platoon is said to have fire discipline. It has acquired the fine art of making good use of the 6,000 bullets carried by its men.

Besides the four companies a battalion has a machine gun section consisting of an officer, a sergeant and sixteen men, with two machine guns.

A machine gun is a rifle barrel fixed into a machine for firing it automatically and placed inside a large tube filled with water to prevent it getting too hot. It has a tripod stand on which it is so fixed that it can be turned round in any direction. The gun, which weighs about 60 pounds, is carried on the battlefield by one man and the tripod by another, and these two men work the gun. On the march both gun and tripod are carried in a waggon. The ammunition is carried in boxes and each gun is accompanied by 3,500 rounds with 8,000 more in the regimental reserve.

The gun is fired by pressing a button. The recoil of the first shot empties and reloads the rifle and fires the second shot, and this process is continuous so long as the button is pressed. The normal rate of fire is 300 shots a minute, and the machine gun has greater facilities for accuracy of aim than a rifle fired from the shoulder as well as for observation of the correctness of the estimated range. The machine is, however, liable to various accidents which may interrupt its working, and therefore requires great care in manipulation and should be handled only by men thoroughly familiar with it. The tripod holds the gun from one and a half to two and a half feet above the ground. The man firing it sits or lies on the ground and the ammunition box from which the gun helps itself to cartridges is placed on the ground beside it. A low bank and a bush will conceal the gun and the men from the enemy's sight, and a small

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circular trench will protect them against bullets while allowing the gun to be fired in any direction. The bullet and its path are exactly the same as those of the ordinary rifle.

The machine gun is used for short bursts of rapid fire and, if the range is known and the gun has not been seen by the enemy so that the shower of bullets is unexpected, the effect at the point aimed at should be decisive. A hidden machine gun would for example entirely destroy troops passing along the cutting of a road or across a bridge. As the gun can be turned round horizontally while firing it can be used to mow down a line of men close together ; but it is not very effective against a line of men in skirmishing order, that is with short intervals between them.

A machine gun section has two 2-horse waggons, one carrying two guns and their tripods with part of the ammunition and the other the rest of the ammunition.

The battalion takes with it altogether twenty waggons or carts. Besides the two belonging to the machine gun section there are five for cartridges, two for water and one for medical equipment. Then there are two for tools, one travelling kitchen for each company, and four waggons belonging to the head-quarters for baggage, stores and supplies.

The four companies of an infantry battalion, having 200 men each, would make the battalion 800 strong, but if to these are added the men of the machine gun section, the men attached to the battalion head-quarters, the drummers and buglers, the sergeants and the officers, the total strength of the battalion reaches 1,000 all told. Four battalions together make an infantry brigade, which is commanded by a brigadier-general with the assistance of a brigade major and a staff captain. The infantry brigade is the largest body or "unit" composed of men of one and the same arm. For it has

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altogether 4,000 men while a cavalry brigade has only 1,700 and a field artillery brigade rather less than 800.

Infantry, however, even in brigades, does not act by itself. It is always associated with the other arms, cavalry, artillery and engineers, to form large composite units called divisions. What a division is, I will tell you after giving you some account of artillery and cavalry.

CHAPTER II

THE SHELL

A Cannon a Great Rifle—The Shell a Large Hollow Bullet—The High Explosive Shell—The Shrapnel—The Time Fuse—The Percussion Fuse—Burst of the Shrapnel—The Howitzer—Effect of Shrapnel—Method of Finding the Range—Indirect Firing—The Field Gun—The Battery—The Brigade—Horse Artillery—Formations and Paces.

A CANNON of any kind is simply a big rifle. The barrel is shorter in proportion to its diameter because if it were as long in proportion it would be too heavy to drag and too clumsy to handle. The great guns of a battleship are much longer in proportion than field guns because they can be easily handled in the revolving turrets which hold them. The projectiles fired by cannon are called shell. They are just the same shape as bullets, but made of steel, and hollow. As the steel cannot be squeezed

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into the grooves of the barrel like the soft lead of a bullet, a shell is surrounded by rings of soft copper, some of which is forced into the grooves. The flight of the shell is governed by the same principles as that of the bullet.

Every shell is meant to explode at or near its destination. There are two sorts, used for two different purposes. If the gunner wants to smash some solid object, a wall, a house or an earthwork, he uses a hollow steel shell filled with a high explosive—picric acid, gun-cotton-powder, nitro-glycerine or ammonal—which will detonate or explode completely in one flash when the shell strikes the object. To cause this instantaneous explosion the front of the shell contains a small quantity of some substance sure to explode and to fire the whole mass on striking.

Against troops gunners always use a shrapnel shell, so called after the English Colonel Shrapnel, who invented

it in 1803. This is a thin steel case, the shape of a big bullet, divided into two compartments. The front compartment contains hundreds of round bullets, while the back one is filled with powder. The shrapnel also contains a fuse, or tube of a slow burning composition which takes fire from the explosion in the gun and gradually burns while the shell is in the air. After a certain number of seconds the fire in the fuse reaches a point where it communicates with the gunpowder in the back chamber, and then the gunpowder explodes. Thereupon the bullets are blown out of the shell forwards as though the shrapnel itself were a gun.

The number of seconds which will elapse before the fuse sets fire to the gunpowder is determined by "setting" the fuse before the gun is loaded, and this number of seconds depends upon the range. Suppose you are firing with a shell at infantry two miles away.

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It will take about ten seconds to travel that distance. You want it to burst about 50 yards before reaching the men, when it will perhaps be 30 feet high in the air. In that case the fuse must be timed to explode the gunpowder about nine and a half seconds after leaving the gun.

Besides this time fuse, most shrapnel are also provided with a percussion fuse so that if the shell should, for any reason, fail to burst in the air it will in any case burst on striking the ground.

When the shell bursts in the air it will probably be moving about 600 feet per second and the bullets fired out of it will continue to have at least that pace. But the explosion makes them spread. An 18-pounder shrapnel contains 375 bullets. If the shell bursts in the conditions just described most of the bullets will strike the ground in an oval area about five yards wide and fifty yards long, beginning about 50 yards beyond the point where

the shell exploded, and the path by which they will reach the ground will form an angle of about 20 degrees with the surface. The path of a shell is exactly like that of a bullet, but it travels much farther, and the shrapnel can be used up to a range of 6,000 yards.

Neither the shell nor the rifle bullet will hit a man lying close behind a bank or standing in a deep narrow trench. To hit the man in the trench the only plan is to fire the shell high up into the air so that when it drops down again, its course may be nearly perpendicular. But a field gun is not made to be pointed up in the air. For that purpose there is a different gun called a howitzer, so made that its barrel can be given a great tilt. It has a wider bore than the field gun and its shell is not so long. A field howitzer shell weighs 30 or 40 pounds (that of an English field gun weighs only 18) and it will contain 700 or 800 bullets.

The gun can be fired with greater

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accuracy than the rifle, because, while the rifle is held by the man, the gun is fixed on its carriage and is perfectly steady. If the gun is given the elevation for 4,000 yards and the fuse is fixed for the right time its 375 bullets will infallibly drop in the oval area 5 yards wide and 50 yards long, of which the centre will be 4,000 yards in a straight line from the gun's muzzle. I have stood by a row of targets representing men standing up and watched them peppered by the shrapnel of 36 guns firing at them from a point perhaps a mile and a half away. They were thoroughly riddled with bullets and the impression given to the spectator was that nothing could live under that tremendous hail. But it is not very easy for the gunners to find the range of a distant object, and if their estimate of it is mistaken the shells will go to the place where they suppose the enemy to be without doing any harm at the spot where he really is.

The gunners have a system of finding the range by trial shots. Having made a guess at it they fire a shot aimed at a point 100 yards less than the supposed distance and watch for the puff of smoke which the shell will make as it bursts on striking the ground. When they see the smoke in front of the target they know that the shell has fallen short. Then they fire another shell to drop 100 yards further than the estimated range, and when they see the smoke of the explosion behind the target they know that it has fallen behind it. After that a shot is fired with a range mid-way between the short shot and the long one. If they have seen clearly, the bullets of this third shell are pretty sure to strike the target.

This method depends upon the power of seeing the puffs of smoke made by the bursting shells, and it is usual to have an observer stationed at some distance away to the right or left of

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the gun to watch the bursts and to signal whether they are short, long or true. As a rule he is provided with a portable ladder which he mounts in order to see better. The correct observation of the shots for the range and the correct timing of the fuses are always difficult, much more difficult in battle than on the practice ground, so that artillery does not often produce in the field effects comparable to those obtained in peace trials. In the present war it is the practice for aviators to communicate to the gunners the positions of the enemy so far as they can observe them.

The modern gunner has no difficulty in shooting from a concealed position at an enemy who cannot be seen from the guns. In the French manœuvres I watched a line of guns on the hither slope of a hill, shooting over a wood which covered the top of the hill against infantry coming up the other side. Of course, they were only making believe, as in

manœuvres you cannot fire shells but only blank cartridges, which merely make a noise to show that you are there. But shells can be fired in this way with full effect. For the gunners have an officer posted at a point where he can see the enemy. They have only to know the enemy's direction and to point their guns accordingly with the proper elevation for the distance. The result will be just as good as if they saw the enemy. But the difference is this: the guns which I saw were between half a mile and three-quarters of a mile away from the enemy's infantry. If the infantry could have seen them they would have fired at them and at that range would in a few minutes have shot down the gunners, except a few who might have been sheltered by the steel shields with which modern guns are usually provided.

A field gun rests on a carriage which is the equivalent of a tripod, the three feet being the two wheels of the carriage

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and the trail or steel beam which forms part of it, and rests on the ground behind the gun. On the march the end of the trail is lifted up and hooked on to the back of a two-wheeled carriage called the limber, so that gun and limber together make a four-wheeled carriage which is drawn by six horses and driven by the riders of three of them. Each gun is accompanied by two ammunition waggons each drawn in the same way by six horses.

Until a few years ago a field gun used to fire about one shot a minute or less. It could be loaded in a few seconds, but when it was fired the recoil made the whole carriage jump back, and before the next shot it had to be dragged back to its original position and the aim again carefully adjusted. But the modern gun has a hydraulic buffer which receives and checks the recoil while the carriage is held in its place by a spade at the end of the trail, so that the time which

used to be wasted in dragging the gun back into its position is now saved.

Guns are used in batteries or groups usually of six guns each. Three batteries make a brigade. The brigade on a war footing has therefore 18 guns and 36 ammunition waggons, which with a water cart and two baggage waggons for each battery makes 57 vehicles, which together take up about 1,200 yards of road. On the march, guns and waggons follow one another and never go two abreast. The brigade includes an ammunition column which has 34 waggons and takes 520 yards of road.

The main difference between horse and field artillery is that all the men of the horse artillery are mounted, while in the field artillery a certain number of them usually march on foot and when the pace is quickened ride on the limbers and waggons.

The fighting formation of artillery is a line of guns side by side with 19 yards

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interval between gun and gun, so that a battery occupies a frontage of about a hundred yards. The six horses by which a gun is drawn are a very large target, and so long as the battery is on the march or in movement it is very vulnerable, because the horses are easily shot. When the guns are in line ready for firing each gun can be worked by three men who are partly protected by the steel shield. The great object of artillery officers is so to post their guns that as much as possible of the country in front of them may be exposed to their shells while the guns themselves are concealed from an enemy's view. In battle, of course, the horses and drivers are kept under cover some distance in rear of the guns.

The paces of artillery are four miles an hour at a walk, eight miles an hour at a trot, five miles an hour when, on the march, the walk alternates with the trot, and twelve miles an hour at a gallop. The usual pace of manœuvre is the trot.

CHAPTER III

THE BAYONET, THE GROUND AND THE TRENCH

A Battle a Shooting Match—The Hand-to-Hand Encounter—Importance of Skill in Using Steel Weapons—Their Influence on Men's Spirits—The Bayonet Charge the Sign of Superiority in the Fire Fight—Importance of Ground for Cover and Protection, and, therefore, of the Choice of a Position—The Value of the Trench as Shelter from Rifle and Shrapnel Bullets—Time required for its Construction—The Choice of a Site.

A FEW years ago I spent a day on a Scotch moor with a party of friends who were grouse shooting. We came to a place on the brow of a long gentle slope where a series of butts had been made about thirty yards from one another in a long line. Each of them was a mound, shoulder high, forming three-quarters of a circle with an entrance a yard or two wide at the back. In one of these I stood with one of my friends and the

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gamekeeper, whose business was to load the guns. After a time a number of birds came flying towards us up the hill, and when they came near enough my friend began to shoot at them and they dropped quickly one after another, as they were hit. This rush of birds towards us was repeated every few minutes, and every time a number of them were shot and fell. It was exactly like a battle, except that it was one-sided. To complete the resemblance there ought to have been showers of bullets whizzing past the butt, so that whenever we put our heads up we should have had a chance of being struck, high explosive shells dropping all about us, ploughing deep holes in the ground and scattering their fragments in every direction, and shrapnel bursting in the air in front of us and raining bullets all over the ground and into our little enclosure.

A modern battle is a shooting match in which each side not only shoots but

is shot at. While this is going on the men of one army see very little of those of the other. They are never near enough to recognise one another. There is no conflict of individuals. It is more like resisting thunder and lightning than like fighting with men.

But there are times in a battle when the men meet one another, and then there may be a fight man to man. This is something quite different from the shooting match, for here every man depends on his own spirit, strength, skill and quickness. In these cases the foot soldier's weapon is the bayonet, a sharp pointed knife, 18 inches long. Fixed on the rifle it makes a pike or lance just over five feet long, and weighing between nine and ten pounds.

In an actual encounter with the bayonet the advantage is with the more skilful, as it is in every kind of fence, for fencing is a very fine art, so little cultivated nowadays that few people

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appreciate it. In my Oxford days, I used to practice every day with the foils, and after a year or two had skill enough to know what it means. A beginner or half-taught man has no chance against a good fencer. He will never touch his opponent, who can play with him and touch him whenever and wherever he pleases. With any pointed weapon a touch means a serious, probably a deadly wound. What is true of the foil holds good also of the bayonet, which in skilled hands is, like Fitz James's sword, both sword and shield. The infantry soldier therefore who has learned to fence with the bayonet will have a great advantage in a hand-to-hand encounter. But this kind of fight is very rare. Infantry that can shoot well and that have plenty of ammunition will never let an enemy's infantry come near enough to them to cross bayonets ; they will shoot them down first.

The inference has sometimes been

drawn that the bayonet is superfluous, and it would be so if infantry always had plenty of ammunition, could always keep themselves in good order, could always remain cool and could never be taken by surprise. But in the firing contest there comes a time when one side gets the upper hand. If the men have discovered that they are the better shots, the enemy has made the same discovery, and the spirits of the one side are raised as much as those of the other are depressed. The feeling of despair must come over men who find themselves firing hour after hour without effect and feel more and more as their losses increase that the enemy's bullets are doing terrible execution. If then the enemy, already near at hand, overwhelms the position with a whirlwind of bullets and is suddenly seen rushing on with the bayonet the troops that already feel themselves beaten will never wait to meet that rush.

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The bayonet charge is the sign of superiority in the fire fight ; it is the claim to have won, and it is a claim which in modern war has rarely been made in vain. The bayonet has no chance against the bullet, and no sane man contemplates the employment of the bayonet until the bullet has done its work.

A most important matter for soldiers to think about is how to make the best use of the ground, whatever it may be. It has two uses, to keep you out of sight of the enemy until you are ready to shoot at him and to protect you from his bullets when he shoots at you. But the two uses are distinct, because you may be out of sight of the enemy, and yet exposed to his bullets, which may hit you without being aimed at you. Most people have no idea how easy it is to hide themselves on the ground. The best way to find out is to make a few experiments. Cut three sods 18 inches long and a foot wide and put them one

over the other at one end of a cricket pitch where the wickets would be, then lie down behind them so that your body is in the prolongation of the line joining the two wickets. Get a friend to stand at the other wicket. The three sods will completely hide you, he will see them but not you. Go with a friend into any field and try the experiment of lying down flat on the ground in turn 50 yards away from each other. You will be surprised to find how easy it is to hide yourself behind the most trivial undulation. When you once get into the habit of noticing the folds and waves of the ground you will begin to discover that in most kinds of country a skilful leader could march a company or a platoon across the landscape so that an observer sitting still on some point half a mile away from his route would never catch a glimpse of any of the men. An enemy as a rule, does not fire at troops that he does not see. There may be

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cases when, if an officer suspected that a body of troops were hidden in a given fold of ground, he would fire a few hundred bullets into that fold on the chance of disturbing him. But as a rule this would be a waste of ammunition. Accordingly a wise officer will now and then practice so marching his men across a piece of country as to keep them out of sight of an observer stationed at a given point. It is always judicious when near the enemy to keep your troops, if they are not firing, out of his sight ; and it is very useful, when you are holding a position, to have studied the country in front of you so as to have a good idea where the places are in which the enemy may be moving or keeping troops that you cannot see. The weak point of any position on the top of a hill is that, as a rule, the slope of the hill is convex and that therefore there is a great space at its lower end into which you cannot see. Such places are full of

danger to you, because in them the enemy can collect his troops without your knowing, and can move them to your right or left without your being able to watch what he is doing. Always try to find a position from which you will have a clear view of the country in front of you.

If a battalion has to act on the defensive, that is, if it has to hold its ground for some time against a heavy attack, its commanding officer will be wise to prepare his position, which of course he will choose as well as conditions allow. The best position is that which the enemy cannot approach without being clearly seen, so that he must be exposed without protection to the bullets of the defenders. It is a further advantage to the defenders if they can be sheltered as much as possible from the enemy's bullets.

The best shelter is a deep trench in which the men can stand up and

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lean on the front edge to fire. When the trench is dug the earth taken out forms a mound in front which adds to the shelter and forms a rest for the rifles. It would be still better if a great beam of wood could be fixed a few inches over the mound so that the men could fire through the gap between the mound and the beam while the beam would protect their heads, and also if there could be here and there a cross mound to stop any bullets that might be fired by the enemy along the trench from the flank.

A trench three feet deep and two feet wide and with a mound in front of it six or seven feet thick and a foot and a half high will give its defenders an immense advantage provided the ground in front of it is all clearly exposed to their view for half a mile in front. To make such a trench 100 yards long in easy soil would take 40 men 3 hours, provided of course that they had the

tools, say 30 picks and 35 shovels. Thus then your platoon between six and nine in the morning working with a will could make itself a very respectable trench. But, unless time is to be wasted, the platoon commander must know how to design the trench and to set the men to work.

The great thing is to put trenches in the right place, in determining which the first consideration is a clear field of fire without shelter for the enemy and a situation which the enemy cannot enfilade or shoot along from either end.

From this it will be clear how important it is that officers should constantly study the ground in order to be able quickly to determine what are the most favourable positions for defence in any sort of country and what kind of sites are favourable and unfavourable for the location of trenches. The officers need to be skilful in planning a trench and laying out the work and the men to have enough

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Practice to make them familiar with the different tools so that a platoon may be able in a few minutes to turn itself into a gang of navvies.

CHAPTER IV

DRILL AND FORMATIONS

Effect of Drill on Character—Fighting Formation
the Extended Line—Importance of Keeping
the Direction—The Advance by Rushes—
Effect of Unaimed Fire—Formation of Sup-
ports—Difficulty of Moving them to their
Right Place—The Order of March is the
Column of Fours—The Reason why Distances
must be Preserved—Pace of Infantry.

DRILL serves two purposes. The first is spiritual. It gets you into habits of alert attention and precision which constitute a special condition both of body and mind. For the purpose of accustoming you to respond instinctively to the words of command the drill must be repeated for many weeks. Then the caution, the slow word first given, finds you ready, and the executive word—the short, sharp shout, which means nothing except to the soldier's ear—makes you move on the instant,

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without thinking at all, in unison with the other men beside you.

You may have thought during those weary weeks that you were being made into a machine, and no doubt your body has become accustomed to words of command and to the movements, but if you examine yourself you will find that something has happened to your mind too. You hold yourself better, you think better of yourself, of your comrades, of the sergeants and of the officers. A good deal of conceit has gone out of you. You are becoming part, not of a machine, but of an organism. Your battalion is more than a machine, it is a living creature made up of a thousand members, each of whom has his own work to do and his own place. And you are aware that the life of that great organism is in you as well as your own personal life. Thus the first use of drill is to make a new man of you.

Its second object is to put you in

your right place on the march and in the battle. For infantry there is only one fighting formation, a line of men with intervals between them. The weapon being the bullet, each man must have room to handle his rifle, and to lie down in any position convenient for shooting. The line must never be so crowded that the men are cramped for shooting, and no man should be in it except those who are shooting, because it is no use exposing to hostile fire men who are not contributing to damage the enemy. The officers and section leaders, though they do not themselves fire, contribute to that end by giving the fragments of the firing line an intelligent direction and control. Except when it is necessary to keep up the heaviest possible fire, there should be plenty of room between the men, because if there are a number of paces between them the enemy can aim only at individuals, whom he has a very good chance of missing.

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The vital matter in the advance of a firing line is to keep the true direction without crowding. For this purpose a directing file or man is named by the section or platoon leader, and the other men of the section or platoon have merely to keep roughly level with him at their proper intervals. A little practice makes this quite easy in open ground, but in close country and especially in woods, practice is needed both by leaders and by men, for without practice, it is, in such conditions, difficult to keep the true direction, and men are very easily parted from their section or platoon, in which case they are apt to be lost till after the battle is over.

In moving forward to attack the advance is made in a series of rushes, by platoons, from cover to cover, and the men have to learn to spring up quickly, to run forward to the new place which has been pointed out to

them and there to throw themselves flat on the ground as quickly as possible. In this way the enemy is given only brief opportunities of aimed fire at the men and during those short moments such target as they present is quickly moving.

Troops on the battle field behind the firing line will always be exposed to the bullets that have been aimed at the firing line but have passed over its heads, and the space behind that line for several hundred yards will always have such bullets dropping upon it. The effect of these bullets is not much influenced by the formation in which the men are moving, but if the enemy sees groups or masses of men behind the firing line, he is most likely to aim at them if they are within range, that is within 2,000 yards of his position, and his artillery will fire at any distinctly visible groups up to much longer distances.

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All bodies behind the firing line, whether called supports or reserves, are merely reservoirs of men from which to replenish or increase that line. They are moved in such formations as will conceal them as far as possible from the enemy's view, so that he cannot aim at them, and will offer the least vulnerable targets to his aimed fire. It is the business of company and platoon leaders to choose these formations according to the nature of the ground and the enemy's position. That is why they should be familiar with the normal effects of fire, aimed and unaimed, on different kinds of ground and at various distances behind the firing line.

If you are the officer in command of a platoon or of a company and it becomes your duty to follow at some distance a portion of a firing line in order at the right moment to reinforce it, you will find it much harder than you ever suspected to bring up the men whom

you command into the right place. Nothing is easier than to lose your way and to find yourself reaching the firing line at a point far to the right or left of your intended destination. If you are 400 yards behind a line of skirmishers it is not easy to distinguish between the companies or even the battalions in front of you. Accordingly the golden rule is to keep your eyes and your attention directed to the front, and as soon as possible to pick out prominent objects in the landscape before you, so as to be able to fix and maintain the true direction of your advance. An officer in the firing line must never take his eyes off the front. He must continually try to estimate the numbers and distribution of the enemy in front of him, adding up from time to time the parties of the enemy of which he has had glimpses.

We have seen that the line of men extended, or as it used to be called.

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the line of skirmishers, is the only formation in which infantry fight. When there is a bayonet charge the men run forward just as they are. The only evolution which such a line ever requires to make is a wheel or change of front, which may be required when the direction of the advance has to be modified or in case of attack from a flank. All other evolutions and movements are merely modes of moving supports and reserves across the battle-field or of passing from the order of march into the fighting order.

The order of march for infantry is the column of fours, an endless procession of men four abreast. You can tell a well-trained battalion at a glance if you see the men marching at ease in fours, because in a well-trained body of men each one is always in his exact place, each set of four men being precisely in line with one another and each single man precisely behind the man in front of him.

The distance at which one man stands behind another after the words "Form-Fours, Right" is 54 inches measured from heel to heel. Men must be accustomed to keep this precise distance and never to increase it. This is the all-important point in marching, because the smallest increase of this 54 inches means a very great increase of the length of the column. A company of 200 men in line is 75 yards long, and when formed into fours fills just the same length on the road. On the march six yards distance are allowed in rear of each company, so that a four company battalion with three intervals would occupy 318 yards. If the distance from man to man were increased from 54 to 60 inches, that is if each man were to allow his normal distance from the man in front of him to increase by only six inches, the length of the battalion on the road would be increased by 43 yards.

An infantry division has twelve

battalions, and if it were marching on one road the increase of the distance between the fours by six inches would make the column 516 yards longer than it should be. In practice men very often allow the distance to increase by as much as 18 inches, which makes the infantry of a division occupy a mile of road more than they would do if the regulation distances were strictly maintained. The result is apt to be a waste of time in closing up at every halt, needless extra fatigue for the rear men of each battalion and for the rear battalions of every column.

The best practical tests of the success with which a battalion has been drilled for war is the precision with which the men keep their correct places and distances when marching at ease in fours and the facility with which the companies can move in extended order across an enclosed country. If I were an inspecting officer I should judge the war

value of a battalion by these two points and by its field firing.

The normal pace of infantry is that of marching in quick time, which is at the rate of 120 paces of 30 inches in a minute, equal to 100 yards a minute, and to three miles 720 yards in an hour. This rate may be maintained for an hour or two, but is not a safe guide to the distance which infantry will cover in a given number of hours, partly because long columns are very liable to checks from time to time, but mainly because it is usual for infantry to halt every hour for a given number of minutes, preferably for ten minutes. Accordingly in calculating the time occupied by infantry in marches it is best to assume an average progress of two and a half miles an hour.

CHAPTER V

CAVALRY

The Services that Cavalry renders to an Army—Need for Thorough Training—The Eyes of an Army—Cavalry Charges Rare—Cavalry in Pursuit—Raids—The Cavalry Charge—Against Cavalry—Against Infantry—The Cavalry Brigade and Division—Paces—Dismounted Action of Cavalry—Mounted Infantry.

A MODERN army requires its regiments of horse, although the bullet and the shell set limits to what they can do in battle, and although the cycle and the motor surpass them in speed and the aeroplane in range of vision. Cavalry is indispensable for scouting and for the pursuit of a beaten army. If it can fall by surprise upon artillery in movement or upon infantry in disorder, its charge will capture the guns or disperse the infantry. It can also do good service by moving fast and far to hold

positions in which it can embarrass and delay an enemy.

For all these purposes cavalry requires training. The men must be good riders, at home in the saddle. They must be accustomed to take care of their horses, for horses easily get out of condition and are then unfit either for the march or the battlefield. They must be masters of their weapon, the lance or the sword, and ought also to be good shots with the rifle. The business of scouting cannot be well carried on without a good knowledge of all the operations of field warfare. The cavalry officer, therefore, must be familiar with the way in which infantry and artillery are handled, so that when he catches sight of them he can quickly divine what they are about. He must be able to find his way in any country with the aid of a map. If he knows the language spoken in the theatre of war it will be of the greatest use to him, for if he cannot talk to the inhabi-

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tants or understand what they say, he might as well be deaf and dumb. To be of any use on the battlefield men and horses must have been thoroughly drilled, so that a squadron can ride in line at any pace and can wheel or change formation with regularity, precision and certainty.

✓ If these conditions are fulfilled a general can use his cavalry as the eyes of his army by sending small parties of them far ahead of the army on every road and track, so that their messengers may let him know which areas contain hostile troops and which are free from them.

The charging action of cavalry in battle is necessarily rare. The cavalry leader's function is to watch the battle so that if an opportunity offers he may be ready to take advantage of it. Such opportunities are few and fleeting, but when they present themselves the intervention of the cavalry may be at that time and place decisive. When an army has been beaten and is retreating the cavalry will

move along its flanks or between the roads by which it is retiring and will lose no opportunity of threatening or of striking the demoralised troops from the direction in which attack is least expected. A beaten army, pressed by the victors and therefore hurried, when it is thus harassed from the flanks and rear, very soon becomes a helpless mob.

Another use of cavalry is to make raids to points far behind the enemy's army for the purpose of blowing up great railway bridges, so that he cannot make use of the main lines of railway, or for the destruction of stores of food and ammunition or the capture of railway stock or of trains of waggons or of motor cars.

Part of the superiority of cavalry over cyclists consists in their power of moving across country. They are not in the same way confined to roads as are most wheeled vehicles.

In a cavalry charge against cavalry, the horses should be thought of as

projectiles. The horsemen of the front line are side by side so that their knees almost touch; when they ride at full speed the line seems like a rushing wall or wave of horses which must shatter anything against which it dashes. If the opponents have the slightest misgiving they will avoid the collision. But the actual crash of horse against horse never takes place, because if both sides continue their career the horses of each side always make for the intervals between the horses of the other side and the two lines ride through each other, the men using their weapons according to their skill as they meet and pass. Then the two sets of men mixed up fight hand-to-hand. If a fresh body of cavalry rides into the mass the whole body is driven along in the direction thus given. After a short time the two sets extricate themselves, one set collecting in the direction from which they came, and the other set in the direction of their original advance.

The second set usually claims the victory.

In a charge against infantry the horsemen ride at the infantry with intervals between the horses and one line is followed by another and another, each being forty or fifty yards behind the one in front of it. The object is to ride through the infantry and to kill or wound them with the sword or the lance in passing. In such a charge skilled lancers usually succeed in killing a great number of infantry. But if the infantry are cool and collected, have plenty of ammunition and see the cavalry two or three minutes before their arrival, the probability is that the saddles will be emptied and the horses maimed or killed before the infantry can be reached. The chance for the cavalry is to come upon the infantry suddenly from a flank in such a manner that they cannot themselves be taken in flank by the fire of other infantry or of machine guns.

Cavalry is formed in squadrons of a hundred to a hundred and fifty men (or horses) each, and the squadron is always formed in line, the horses side by side, with a second rank behind the first. A regiment has three squadrons, which in all evolutions except the charge are kept one behind the other. The charge is always delivered in line in two ranks, and any squadrons not in the front line are used to attack the enemy in flank or to give a fresh impetus to the first charge.

In the British service each regiment has a machine gun section. Three regiments form a cavalry brigade, and a number of cavalry brigades, in the British service four, are grouped together, with one or two horse artillery brigades, to form a cavalry division, which is therefore a great body of thirty-six squadrons with forty-eight guns and eighteen machine guns.

Cavalry on the march are either four

horses or two horses abreast, and therefore take up a great deal of space on the road. An English cavalry division at full strength has nearly 10,000 horses and over 400 waggons. On the march four abreast it would form a column six miles long without a break, and would be followed by five miles of waggons.

Cavalry on the march moves sometimes at a walk, at the rate of four miles an hour, sometimes at a trot at the rate of eight miles an hour. If these paces are alternated the average rate of progress will be about five miles an hour. The pace of the gallop is fifteen miles an hour.

What is called the dismounted action of cavalry is their action with the bullet, which is identical with that of infantry. But as cavalry are comparatively few, costly to maintain and require a long time to train, it is bad economy to use them for any work that infantry can perform equally well. They may be sent to a

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distance, far beyond the powers of infantry to reach, to accomplish any task within their capacity. For instance, a regiment of cavalry could employ two hundred men in a fire fight. That is only the strength of a company; it would not be enough to make a strong resistance to a battalion of the enemy. But it could delay the battalion for some time because the enemy could not at first tell whether the bullets came from cavalry or infantry, and, if the dismounted men were well posted, would take a good while to discover the real strength by which he was opposed. But the moment that discovery was made it would be time for the cavalry to rejoin their horses and ride away.

The particular service just described can be equally well performed by mounted infantry, who differ from cavalry only in not being armed with the lance or the sword but merely with the rifle and bayonet, and therefore are not trained

to the charge or in the evolutions preparatory to the charge, which require precise and thorough drill both of men and horses. The name of mounted infantry is no longer used in the British Army. The service which they used to render can also be performed by infantry carried in horse or motor vehicles, especially in motor omnibuses.

CHAPTER VI

THE DIVISION ON THE MARCH

Composition of the Division—Arrangement of Bivouacs—Area Required—Billets—Principle on which Troops at Rest or on the March are Protected—A Division Marching along a Single Road—Space which it Covers and Time Occupied.

AN infantry division is so called to distinguish it from a cavalry division, which is a large unit made up of mounted troops only. The infantry division is more properly called simply a division, because it contains all the arms and not infantry alone. It is a small army complete in itself. The best way to explain it to you will be to give you a table showing its composition and the number of men, horses, guns, waggons and carts of which it is composed.

Suppose the whole division to bivouac, that is to encamp without tents, in the

COMPOSITION OF A COMPLETE DIVISION ON A WAR FOOTING.

DETAIL.	PERSONNEL.	HORSES.	GUNS.	VEHICLES (EXCLUDING GUN-CARRIAGES AND LIMBER).		ROAD SPACE yards.
				Total	Riding.	
1 Headquarters	-	-	-	5	-	-
3 Infantry Brigades	-	-	-	67	82	5
1 Headquarters Divisional Artillery	372	11,793	12,165	195	546	100
1 Field Artillery Brigades	4	18	22	20	24	108
3 Field Artillery (Howitzer) Brigade	69	2,316	2,385	594	1,650	11,880
1 Field Artillery (Howitzer) Brigade	22	733	755	195	502	45
1 Heavy Battery and Ammunition Column	-	-	-	-	18	2
1 Divisional Ammunition Column	6	192	198	29	115	45
1 Headquarters Divisional Engineers	15	553	568	56	653	6,270
2 Field Companies	3	10	13	5	3	5
1 Signal Company	-	12	422	34	118	1,905
1 Cavalry Squadron	-	-	157	162	33	-
1 Divisional Train	-	-	6	153	153	-
3 Field Ambulances	-	-	26	402	428	-
	-	-	30	673	702	-
Total in the Field	-	-	585	17,488	18,073	27,700 = 154 m.
				1,471	4,121	9 275

This Table is taken from Army Orders dated April 1st, 1914, containing amendments to the Field Service Pocket Book. The Road Spaces are based on the figures there given.

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open, as may be done for a day or two. A battalion would be drawn up in quarter column of half companies, each half company six yards behind the one in front with three yards interval between the two platoons. Each two men make themselves a shelter of two waterproof sheets hung across a rope between two poles, the ends of the shelters being towards the front, so that each rank of each platoon would sleep in a row of shelters side by side with the roof strings pointing from front to rear of the camp. The rear rank shelters would be two yards behind those of the front rank. The subalterns' shelters are on the right of half companies, the captain's in front of the leading half company.

Behind the rear half company a space as broad as a half company and about fifty yards deep is reserved. Its front part contains the battalion kitchen and the officer's mess with its kitchen. In the rear part are arranged on one side the lines for

the horses and on the other side the latrines. Arranged on this plan each battalion occupies a rectangle measuring 75 yards in breadth and 150 in depth. A battery bivouacked on similar principles covers about the same space.

The whole of the infantry and the artillery of the division, arranged in bivouacs of this kind, would occupy a rectangle three-quarters of a mile long and a quarter of a mile deep. The waggons, carts and pack horses would fill about the same space behind them. The division could perhaps just be fitted into Hyde Park. But it is a rule that troops should never bivouac if they can be given better accommodation and under no circumstances for more than one or two nights. The principle is that the worst housing is better than the best bivouac.

During a campaign troops are usually billeted, that is put into houses. For that purpose they must be distributed

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among the houses of the inhabitants, and it is considered that for a short time, a few days, a village or town can house about twice as many troops as it has inhabitants in addition to the inhabitants themselves. But this proportion is often exceeded. Only troops that maintain the strictest order, temperance and self-control can be billeted without causing the inhabitants much distress. There is no better test of the discipline of an army than the impression which it leaves among the inhabitants of a district in which it has been billeted.

In the neighbourhood of the enemy every body of troops not spread out in fighting order, whether it is marching or at rest, requires protection. The troops charged with this protection must delay the enemy long enough to give the general time to study the situation, to make his plans and to arrange his troops in readiness for battle. The method adopted for the protection of the troops

consists in placing between them and the enemy a number of bodies which are smaller and smaller in proportion to their distance from the body to be protected.

A column of troops on the march always has at some distance in front of it a smaller body called the advance-guard, of which a small portion, called the vanguard, is still further in front and will, if possible, be mainly composed of cavalry. Unless there are other troops of the same army marching on parallel roads to the right and left of the column it should also have flank guards on those roads.

Let us suppose that a British division has been bivouacking for a day or two in Hyde Park, and that it is ordered to start at 6 a.m. along the road through Redhill to attack an enemy advancing from Brighton. The Lieutenant-General commanding the division, as he intends to attack, will wish to form a strong advance-guard, and in order

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not to break up his units will form it of his squadron, a brigade of infantry and a brigade of field artillery, with a company of engineers, a signal section and an ambulance section. The squadron will move off quickly to clear the road and get about two miles in front of the infantry van guard, pushing a troop of scouts a mile to its front with a second troop to support it midway between the scouts and the remaining half-squadron. The infantry van guard will be formed by the leading battalion preceded half a mile in front by a group of scouts and a quarter of a mile by its first company.

Half a mile behind it will come the main body of the advance guard in the following order: a battalion, a field artillery brigade, two battalions, a field company of engineers, a signal section and an ambulance section. The distance from the leading company of the van-guard to the rear of the advance-guard

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will be about four miles. Accordingly the advance guard will not all have passed through the gate at Hyde Park Corner until 7.36.

It will be desirable that there should be a space of say two miles between the advance-guard and the main body of the division. So the head of the main body will not start from Hyde Park Corner until 8.24. It will move in the following order : the first infantry brigade accompanied by a field company of engineers and three signal sections, two field artillery brigades, and the howitzer brigade, three battalions of the third brigade of infantry and the heavy battery, the last battalion of the third brigade, the remainder of the first and the whole of the second ambulance.

This main body, with the carts and waggons that accompany the troops, will occupy eight miles of road. It will not have cleared the Park gates until 11.36. At 11.48 it will be followed by the ammuni-

tion columns a mile and a half long, which will clear the Park at 12.24, and at 12.48 the trains carrying the baggage and food supplies of the division will move through the gates, which the last cart will clear at 1.12.

At 1.12, as the last cart of the division is just leaving Hyde Park Corner, the cavalry scouts will be entering Redhill and Reigate, followed by the rest of the squadron between Redhill and Woodlands. The point of the infantry advance-guard will be on the road three-quarters of a mile north of Merstham. The head of the main body of the advance-guard will be on the road level with St. Margaret's Church, Chipstead, and the advance-guard troops will fill the road for rather more than three miles to a point about level with Reedham Asylum. The head of the main body of the division will be at Purley Oaks Station, and the main body will fill the road through Croydon, Norbury, Streatham and Streatham Hill as

far as the railway bridge crossing the Brixton Road at the foot of Brixton Hill. The middle of the ammunition column will be at Kennington Oval, and the head of the trains will be passing Victoria Station.

Supposing that a halt is now ordered, the advance-guard to bivouac for the night between Chipstead and Coulsdon, and the main body to be billeted in the southern part of Croydon. The last troops of the main body will not reach their destination before 4.15 p.m. and the supply train for the advance-guard will not reach the troops which it has to serve before 6 p.m., unless it is composed of motors, in which case it can arrive almost immediately after the troops. The battalion of the vanguard and the one immediately following it will between 1.30 and 2.30 spread themselves as outposts on the heights between Reigate Hill and Caterham for a distance of a couple of miles on each

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side of the road, so as to be in touch with the outposts of other columns on the main roads to right and left of that followed by the division.

CHAPTER VII

THE DIVISION MEETING THE ENEMY

The Experience of a Private in the Advance Guard—First Report of the Enemy—The Advance-Guard is to Hold its Ground—The Story of the Platoon—The First Shot—The Platoon Entrenches—The Enemy's First Skirmishers—The First Shrapnel—Necessity of every Man knowing His Place and of the Officers having Mastered the Principles explained in the Regulations—Need for Keeping in Good Condition—Prospects of the New Army.

IT is nearly ten o'clock on an autumn morning. You are one of the leading four of the vanguard battalion and there are in front of you the first company forming the point half a mile ahead, and the second company forming its support a quarter of a mile ahead. You have been marching since six o'clock and have just halted for one of the hourly ten minute rests. The road has

led all the morning through a hilly, wooded country, but soon after nine o'clock you came into a fairly open valley, and crossed a brook. You have since then marched up a long slope so that you are now on the top of an irregular East and West ridge. But as you are in a small village you have no view.

The Brigadier-General has been riding just in front of you and is sitting down by the roadside with the map in his hand when the Lieutenant-General rides up, dismounts and speaks to him. "Any reports of the enemy?" he says. "No, Sir," replies the Brigadier-General, and at that moment a staff officer gallops up from the front and, seeing the General, dismounts, while the two officers stand up to receive him. "The advance-guard squadron, Sir," he says, "has met a larger force of cavalry, probably a regiment, about two miles to the front and is holding it in a fire fight. An officer's patrol has just re-

ported a column of all arms on the road about six miles ahead." The Lieutenant-General says to the Brigadier, "I think you had better hold this ridge for the present with your brigade; it gives you a good artillery position and we can collect troops on the northern slope. By what time will your whole advance-guard be up?" "In an hour and a half," replies the Brigadier, "by 11.30." "The head of my main body," says the General, "cannot be up until 12.15, and the rear not till 3.30. You could have the field artillery in an hour if necessary, and the enemy can hardly begin to attack before noon. The divisions on our right and left are about level with us, so that we need not be concerned about the flanks. Make your arrangements for holding this part of the ridge and I will look around and see where to bring up the other brigades."

The place where you are is at a fork of the road. The main road along

which the staff officer came leads to the south-west down the slope of the ridge. A branch road follows the ridge to the south-east. The Brigadier orders the colonel commanding your battalion to prepare to defend the village and to post a party a little way out along the ridge towards the south-east to guard that flank. Your company is ordered in that direction, while the advance companies are extended a little way down the slope to right and left of the main road.

Your platoon is extended on both sides of the branch road towards the south-east, and you move forward about a quarter of a mile, when suddenly there is a whizz of bullets followed by the crack of rifles from some point in the direction in which you are moving. The lieutenant halts the platoon behind the hedge of a lane which crosses the road, and lying down behind the bank you peer through the hedge. A quarter of a mile in front, where the ridge is narrower, there are a

few houses ; probably the shots came from there. "Dismounted cavalry, I suppose," says the lieutenant. No men are to be seen, the firing stops ; no one has been hit and you look around. You are the flank man and can see down the ridge over the plain to your right. The ground slopes down for three-quarters of a mile, with here and there a small wood and many scattered trees, so that you feel that it will not be very easy to see an enemy approaching.

The captain comes up and tells your lieutenant that the colonel would be glad to have the houses cleared, and that the best plan would be to send a section on the south side of the slopes, where they cannot be seen from the houses, so that they can fire on to the road in rear of them, and then to send a patrol to find out what is there. You are sent off with this section. A few yards down the hill the houses are invisible, and in five

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minutes you are on the slope a hundred yards from them, and the section moves cautiously until it catches sight of a number of cavalry horses held in groups behind the houses. They are not two hundred yards away. "Fix bayonets," says the sergeant in a low voice, and sends the four left hand men to creep up the slope towards the houses. The sergeant then orders the rest of the section to fire three rounds at the horses, with fixed sights, and explains that, immediately after, the section is to rush the houses. You take aim. It is the first time you have fired a shot in war. You are determined to aim carefully and to fire slowly. Crack, crack, crack. Two of the horse holders are down and the horses rushing wildly away to the right. With a shout you run to the houses, and half way the sergeant shouts, "Halt! magazine fire." A group of the enemy's cavalry are running towards their horses, two or three of them fall, the remainder

hold up their hands and surrender. At the moment of the first shots one of the men nearest to the houses was lucky enough to shoot a look-out man, evidently posted to give warning.

A few minutes later the lieutenant comes up with the rest of the platoon and posts it facing south on the slope from which you made the rush, so as to prevent an enemy's party from approaching the position through the dead ground along which your advance was made. There is still no sign of any other enemy. The platoon has its back to the houses which you have just taken. You begin to scan the country. About a mile and a half away you see the main road along which the enemy is expected. It is perhaps a hundred feet lower than where you are. From that road the ground slopes down towards you for about three quarters of a mile, after which it rises up towards

you for another three quarters of a mile.

The lieutenant is studying the ground with his field-glass, and after a minute or two says, "Suppose we mark a few distances." Half a dozen men are told to cut sticks from the nearest trees and to tie red rags on to each of them. Then they are to pace 600 yards in a straight line to the front down the slope, stepping yards as well as they can, and there to plant their sticks so that the line of red sticks may mark the 600 yards line from where you are lying down.

A tool cart comes up on the road behind you, and your lieutenant orders a shelter trench to be dug just on the line on which you are extended. It is many feet below the sky line, which is formed by the ridge a hundred yards behind you, and there is a clear view to the front except where a couple of gullies run down the hillside, both of them lined

with trees. The trench is to be two feet wide and eighteen inches deep, and you are all to be very careful in cutting the sods and piling them up behind you. You are placed five feet apart, and in half an hour each of you has dug his five feet of trench. Then you are told each of you to deepen the trench another eighteen inches for a length of two feet just where you stand, so as to have a standing hole three feet deep. This takes you about twenty minutes, after which you carefully cover up with the sods the bank of earth in front of the trench so as to hide it from observers coming from the south. A shelter pit has been made for the lieutenant a few yards behind the centre of the platoon. Then word is passed that each man is to eat the bread and cheese which he has in his haversack from the previous evening. Each man has his pack beside him in the trench.

The platoon seems lonely enough.

There is no one to its left, and, though the next platoon belonging to No. 2 company prolongs the line to the right, everything beyond that is hidden by a spur of the hill where the ridge takes a turn towards the right. The other platoons of your No. 3 company and No. 4 company are in support just behind the ridge, so that you cannot see them, though they have a sentry on the ridge to watch your platoon. You are looking towards the main road across the valley, down which you can see for a mile or two, catching a glimpse here and there of the sunlit surface of the brook. In the copse half way down the hill a number of birds are singing and you try to distinguish their different notes.

Suddenly there is a whizz in the air. There is no mistaking the peculiar whistle of a bullet. Where did it come from? You hear no report, you see no flash ; you look to the left where, half a mile away, you can see by a row of trees and a hedge

that a lane runs down from the ridge towards a farm in the valley bottom. You stand in your hole looking over the little bank with your eyes riveted on that row of trees. More whizzes. Something moves under one of the trees; the next moment you see a brief flash at that spot, and after two seconds another bullet whistles. Your sergeant calls out, "Enemy in the lane to the left, Sir."

Another sergeant calls out, "Enemy on the road in front, Sir." You look at the road and you see above the wall a tiny grey line, it is probably a company of infantry marching along a road. You take out your watch and see that it is just twelve. Again you look at the lane to your left, nothing is to be seen, not a sound. The place where the shot came from is on the slope about fifty feet below you. The continuation of the ridge is in your left rear, and a few hundred yards away the slope is

crowned by a wood which is six hundred yards from the point in the row of trees where you saw the shot fired and the row of trees itself ends just to the left of that point.

You look back at the main road across the valley where there is now a longer grey line, and you see a group of men with intervals walking down from the road towards a wood between it and the brook. "No firing till I give the word," says the lieutenant. "We can't hit those fellows at a mile, and should only give away where we are."

A group of men emerges from the row of trees on the left, coming not towards you but towards the wood on your left rear. There is a crackle like the noise made by blazing thorns, one of the group of men falls and the rest lie down flat. You can see them, as they are on lower ground, about twenty in a row with their sides towards you. While you are still

puzzled the lieutenant calls out, "Left section, can you all see those skirmishers lying down to the left?" You all sing out, "Yes, Sir." Then he says, "Try two rounds at 700 yards." You fire your two shots. The men lying down get up and run back to the row of trees, while the lieutenant says, "Go on firing." Some of them are still lying where they were, and two of those running drop; the rest disappear behind the trees.

What has happened is this: A party of the advance-guard of the next division had just lined the wood in the left rear when the enemy's skirmishers went forward and the cracking noise was the fire of that party. The enemy had caught sight of them and was moving towards them, but ran back when they found themselves enfiladed. They had probably not seen your section at all, and the bullets you first heard were fired at a staff officer riding along the road behind you.

"Cease fire," says the lieutenant, and

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again all is quiet. There is a pause, during which you keep watching the landscape. By degrees you make out parties of skirmishers moving down the slope of the valley towards the brook and coming out from the row of trees across an open field which separates it from a gulley between it and you. You feel that in a short time there may be quite a number of men collected in the bottom of that gulley into which you cannot see. It is on the left front of your section, while down the hill right in front of the platoon about eight hundred yards off is the edge of a wood. It seems a long time before an enemy emerge from that gulley or that wood. You look at the row of red rags and see that they are well this side both of gulley and of wood.

The lieutenant says, "Section leaders open fire as soon as any enemy comes within the 600 yards line and look out for my word in case I see a formed body in support. At that I

would fire up to a thousand yards, which would be in the open this side of the brook." There is another pause and then a few groups of skirmishers are seen moving out from the gulley and the copse. The lieutenant tells off the ground in front of him into four strips for the four sections. Your section has to look after the left hand half of the copse and the ground up to there.

The group of the enemy, walking steadily with arms at the trail, is just approaching the row of sticks. "Let them come a little nearer," says the sergeant, and when they are well past the sticks says, "Commence firing." There is a crack and a noise like a motor-bicycle, several of the enemy drop, the rest disappear. "Wait till they come on again," says the sergeant, "remember, fixed sights and aim low." Then the enemy are up again running, more go down. But you can't tell whether they

are all hit or have simply dropped flat, except that one man turns round and runs away from you and is hit as he runs. There is another rush and this time all the men fall.

It is evident that this first advance was not meant for an attack, and that the enemy did not know that the platoon was here ready for them. They were surprised by the first firing and followed their first impulse to be brave and come on.

Now you see larger numbers coming down the opposite slope and a whole company emerging into the open on your side of the brook. The lieutenant sings out, "At the company, a thousand yards, three rounds, the whole platoon." The enemy's company moves forward extending as it moves, but leaving a number of grey specks on the ground where it was.

There is a loud crack and a puff of smoke just above your head followed

by the thud of many bullets. A shrapnel has burst just over the trench. The bullets have hit the ground and houses just behind ; no one hurt. It is followed by another which bursts a little further behind you, and as you are looking up you see an aeroplane high up in the air over the valley bottom, and you hear the whirr of its engines. It is going towards the enemy, so you suppose it to be British. Then shell after shell in quick succession bursts over your head and you can't help crouching. The enemy has not yet found your trench and is shelling the houses and the road behind you.

By this time the noise of musketry on your right and left is continuous, and the air seems full of the whizz of bullets. You feel ashamed of your crouching and peer over the parapet to look for the guns. You catch sight of a flash somewhere on the top of the opposite slope which seems a long way off, perhaps a couple of miles.

Then suddenly you hear a gun from behind, though you can see none, and you know that your own artillery is on or behind the ridge replying to the enemy's.

I have tried to give you a picture of the beginning of a battle in which all the circumstances are favourable to your side. The space at my disposal does not admit of its completion, and the method I have adopted of a picture of a man's actual experience cannot be applied to the later stages of a battle without becoming painful, as you will easily gather from parts of the sketch I have given.

Your little trench, an hour or two later, could be enfiladed from the right by the enemy's corps artillery and, if it happened to attract his attention, many of your comrades would be killed, because there has been no time to make cross mounds or traverses. Your line would be prolonged to the left, so that there

would be no danger from the left flank, and not the slightest chance of the trench being carried as long as half of you remained fit to shoot straight and supplied with cartridges. The battle might very well go on till dusk, about 6.30.

My chief purpose has been to give you some idea of the great whole in which each individual soldier—officer, non-commissioned officer or private—is but an atom. A single division is but a fragment of an army. Sir John French at this moment commands eight or nine divisions and three or four cavalry divisions. General Joffre probably has more than forty divisions in his first line alone.

You can see then that for the working of an army perfect order is indispensable. Unless every man in the platoon knows his work and his place, and is alert and keen to follow the directions given him by his section leader, the lieutenant could not handle his platoon properly, for he would have to watch his own men instead

of keeping his eye on the enemy. If the captain has to keep putting his platoon leaders right he cannot be thinking about the next directions which he must give them. All the way up from the captain to the Lieutenant-General, every officer has functions of his own to perform and must be free to attend to them instead of having to do the work of some negligent subordinate. Napoleon once said that an army would be perfect in which every officer knew exactly what to do according to his rank in any situation in which he might find himself in war. Napoleon knew very well that soldiers always gladly obey and support through thick and thin an officer whom they know to be keen and intelligent. Soldiers always know the real characters of their officers.

The various official books, the Field Service Regulations, the Musketry Regulations and Infantry Training have been written to explain to officers what they

have to do in the various situations of war. You can get to know it from those books if you read them properly. When you have read a chapter you should take time to ask yourself what principles of action you have learned from it. And you must not consider that you have mastered the chapter until you are able to explain to someone else without the book all the main points which it embodies. After you have mastered the chapters in these books which treat of the March, the Camp, the Fight, of Outposts and of Reconnaissance, you will find that you quite understand what your company or battalion is doing while it is out for field training. But you will also find that it is not always easy, when you are out with your men on the ground, to remember and apply the principles which you have learned. It takes some time after you have seized the principles to get into the habit of applying them in practice. But it will take you very much

longer to learn to do this if you have neglected beforehand to master the principles.

From what I have told you of the march and the battle, you will also gather that you will hardly be able to serve the country in this war unless you keep yourself in first-rate condition. You may be called upon within a day or two of going to the front to do all or more than all that I have been describing. If your battalion starts marching at six o'clock you will have been roused at five, and will probably have had breakfast before starting. You may quite well have to march four hours and dig one hour, and will be well off if you have the chance of eating your bread and cheese before fighting for the rest of the day and lucky then if you afterwards get a good supper. Great exertions with little to eat and short sleep make up the occasional experience of every soldier. You must not shrink from these things, for those who have

lived the life are agreed that it is a good life and makes fine men. The British army now in the field not only knows its business, but is temperate as British armies have not always been. It seems to fulfil Napoleon's ideal. The new army, which it is my desire in writing these pages to serve, has but a short time in which to learn its work. Its officers and men will shorten that time and will very soon be the rivals of their comrades now in the field. They are out for Duty, and they all know that it is for England.

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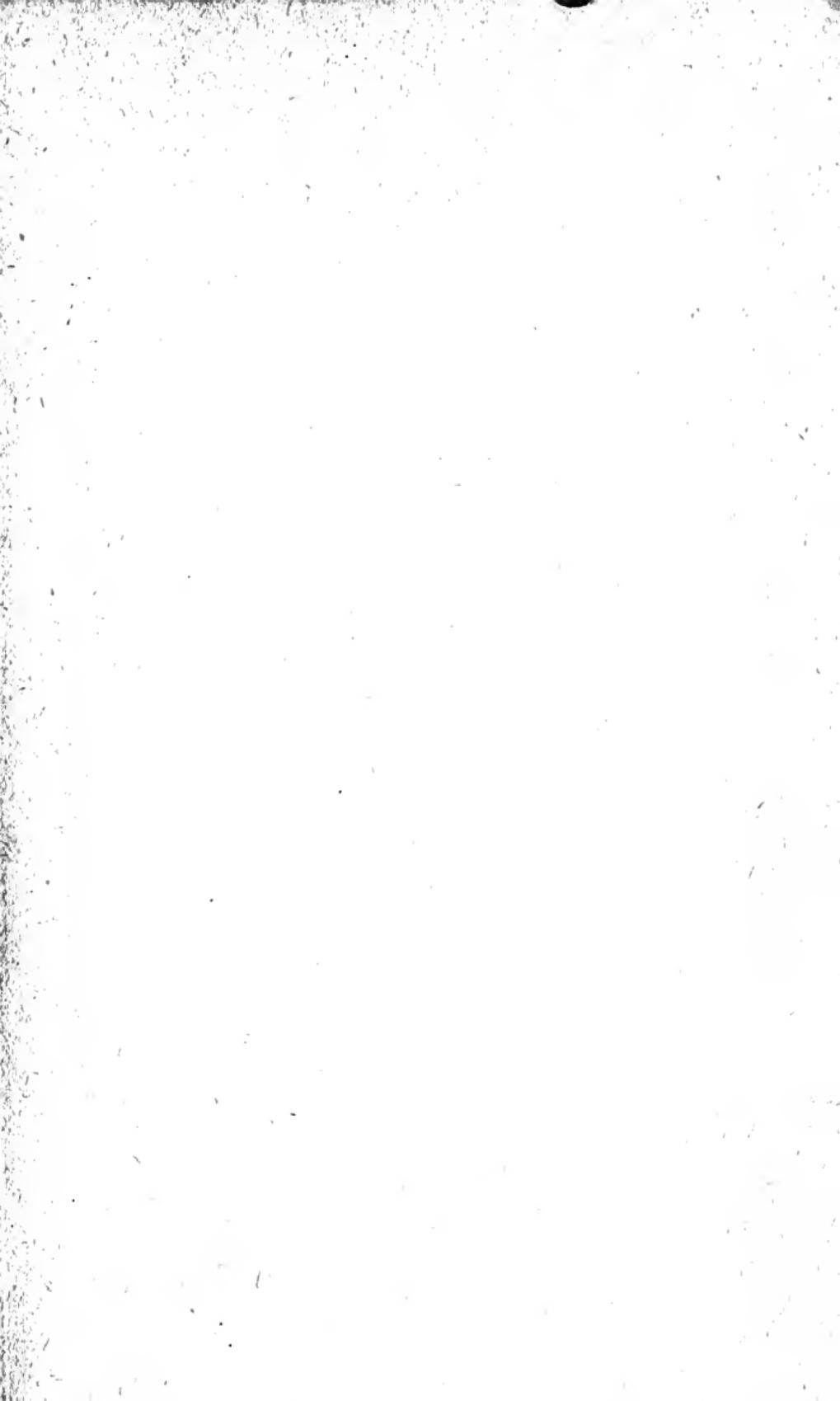
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